

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: io LED

Report Number: P315491

Luminaire Tested: **LDA2B20FL9024D010 PIN1MMS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P315491
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1808-908-15)
Test Lab: INNOVATION CENTER(G2)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: io LED
Catalog Number: LDA2B20FL9024D010 PIN1MMS
Description: PORTFOLIO 2IN ADJ 2000 LUMEN LED LUMINAIRE WITH FLOOD OPTIC AND 2in Adj PinHole, Black oculus, matte metallic silver finish
Light Source: -
Ballast/Driver: -

Summary

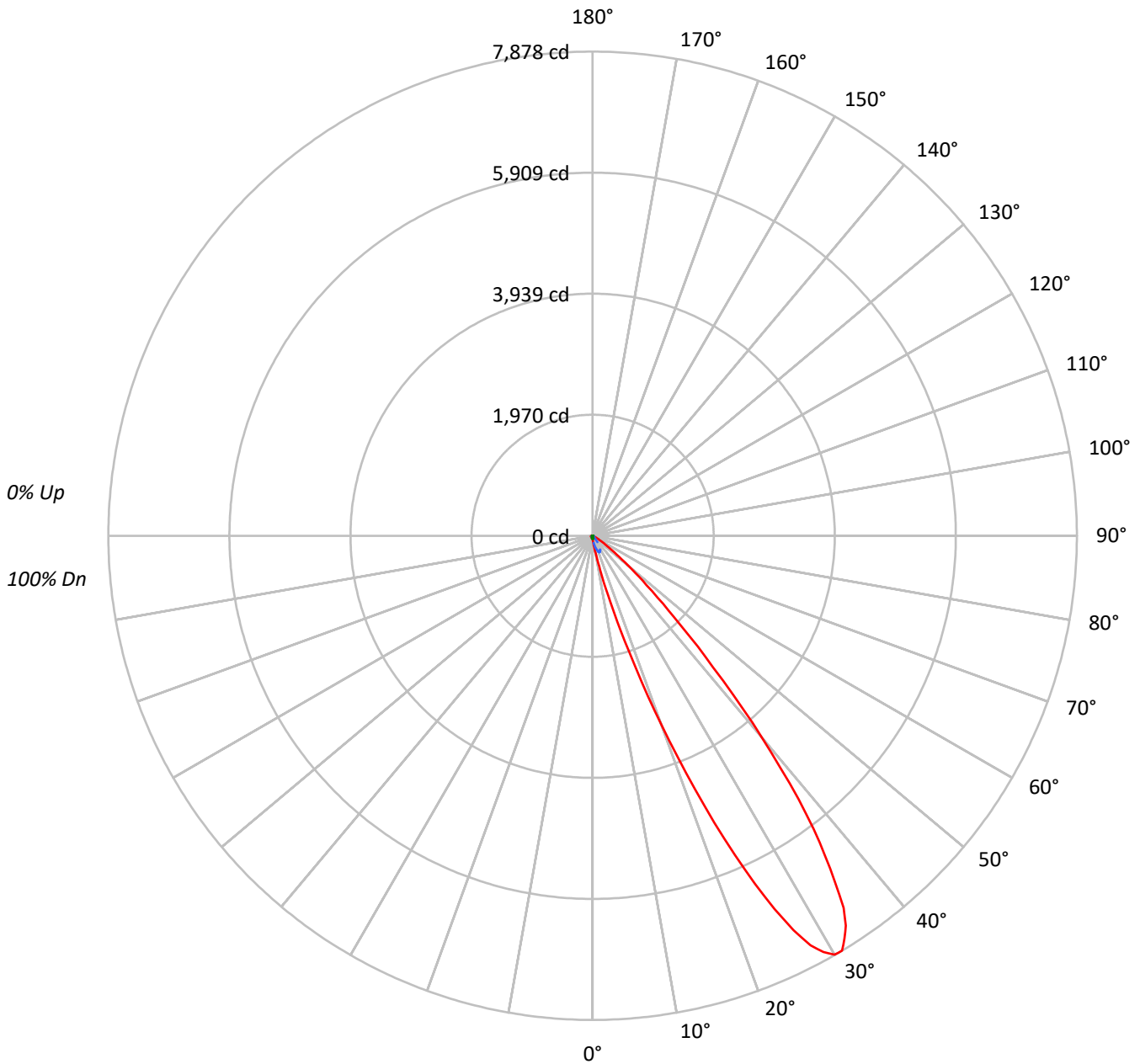
Lumens per Lamp: N/A
Luminaire Lumens: 1149.7 lumens
Efficiency: N/A
Efficacy: 55.8 lumens/watt
Spacing Criteria (0/90/45): 2.92 / 0.6 / 1.34
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

Input Watts (W): 20.6
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P315491
CATALOG NUMBER: LDA2B20FL9024D010 PIN1MMS

Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	112	108	105	102	109	106	103	101	102	100	97	98	96	95	95	93	92	90																			
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80																			
3	97	89	82	77	95	87	82	77	85	80	75	82	78	74	80	76	73	71																			
4	90	81	74	68	88	79	73	68	77	71	67	75	70	66	73	69	65	63																			
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	67	62	58	56																			
6	78	67	59	53	76	66	58	53	64	58	53	62	57	52	61	56	52	50																			
7	72	61	53	48	71	60	53	47	58	52	47	57	51	47	56	51	47	45																			
8	67	55	48	43	66	55	47	42	53	47	42	52	46	42	51	46	42	40																			
9	63	51	43	38	61	50	43	38	49	42	38	48	42	38	47	41	37	36																			
10	59	46	39	34	57	46	39	34	45	38	34	44	38	34	43	38	34	32																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	24175	24175	24175
5°	53932	24911	19463
10°	144380	15530	5511
15°	568380	20073	13025
20°	1719351	12286	10133
25°	3402550	10506	8982
30°	4483422	6267	10995
35°	4137025	9155	13310
40°	2755646	7986	18226
45°	1299781	2861	7675
50°	573118	10592	23794
55°	233101	0	24342
60°	96600	6808	21807
65°	33037	8055	16110
70°	27840	15867	40823
75°	15821	23637	53946
80°	0	11649	23582
85°	15850	15850	78118



TEST NUMBER: P315491

CATALOG NUMBER: LDA2B20FL9024D010 PIN1MMS

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	6.7	0.6
10°-20°	70.3	6.1
20°-30°	361.6	31.5
30°-40°	463.0	40.3
40°-50°	178.0	15.5
50°-60°	36.2	3.1
60°-70°	12.3	1.1
70°-80°	14.3	1.2
80°-90°	7.3	0.6
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	438.6	38.1
0°-40°	901.6	78.4
0°-60°	1115.8	97.1
0°-90°	1149.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1149.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	49	49	49	49	49	
5°	109	90	50	36	39	16
15°	1113	216	39	23	26	427
25°	6250	283	19	15	16	2853
35°	6869	147	15	12	22	4105
45°	1863	36	4	3	11	1601
55°	271	7	0	6	28	281
65°	28	10	7	10	14	40
75°	8	15	12	21	28	11
85°	3	10	3	11	14	2
90°	0	0	0	0	0	



TEST NUMBER: P315491

CATALOG NUMBER: LDA2B20FL9024D010 PIN1MMS

CANDELA DISTRIBUTION (FULL):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
0°	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0	49.0
2.5°	72.4	62.7	65.5	55.8	61.4	62.7	51.7	68.3	61.4	64.1	55.8
5°	108.9	117.2	107.6	103.4	100.7	103.4	100.7	104.8	102.0	89.6	64.1
7.5°	182.0	166.2	166.2	160.6	164.8	163.4	156.5	160.6	151.0	108.9	73.8
10°	288.2	272.3	271.0	266.8	265.4	253.0	246.1	240.6	220.6	128.9	66.9
12.5°	564.7	550.9	541.2	517.1	500.5	490.9	454.3	435.0	377.8	191.7	85.5
15°	1112.8	1041.7	1059.7	981.8	924.5	886.6	810.8	743.9	606.7	216.5	82.7
17.5°	1969.0	1900.1	1853.9	1769.1	1652.6	1551.9	1402.3	1254.1	974.9	246.1	77.2
20°	3274.8	3165.9	3069.4	2923.9	2699.9	2506.1	2242.8	1959.4	1451.3	281.3	69.6
21°	3848.5	3764.4	3652.7	3461.0	3199.7	2940.5	2624.7	2283.4	1654.0	284.0	62.7
22°	4446.9	4392.4	4245.6	4025.6	3720.9	3412.0	3024.6	2649.5	1869.8	288.2	60.0
23°	5070.2	5012.9	4846.8	4595.1	4252.5	3878.8	3427.2	2982.5	2072.5	293.7	58.6
24°	5680.3	5616.9	5431.4	5150.1	4761.3	4331.8	3821.6	3305.9	2261.4	290.9	61.4
25°	6250.5	6162.2	5966.4	5654.8	5228.0	4746.1	4183.5	3585.1	2427.5	282.7	51.7
26°	6759.3	6658.6	6447.7	6107.8	5641.0	5119.1	4485.5	3844.3	2550.2	275.8	49.0
27°	7201.2	7074.4	6848.9	6492.5	5991.9	5415.6	4743.4	4047.0	2658.5	265.4	39.3
28°	7545.2	7399.8	7170.9	6794.4	6265.6	5646.5	4933.0	4173.9	2722.6	266.8	44.8
29°	7743.8	7632.1	7383.2	6988.9	6432.5	5779.6	5032.9	4244.2	2735.0	246.1	42.1
30°	7870.0	7745.2	7489.4	7077.1	6496.6	5809.9	5045.3	4231.1	2698.5	231.0	39.3
31°	7878.2	7747.9	7488.0	7061.3	6471.8	5759.6	4976.4	4153.2	2619.2	215.1	32.4
32°	7730.0	7629.4	7373.6	6933.0	6337.3	5621.0	4828.2	4021.5	2494.4	183.4	22.1
33°	7562.5	7440.5	7186.0	6741.4	6151.2	5431.4	4614.4	3844.3	2364.8	180.6	28.3
34°	7301.9	7155.0	6904.8	6467.0	5892.7	5161.2	4360.0	3607.8	2199.3	164.8	26.9
35°	6868.9	6790.3	6537.3	6105.0	5547.2	4837.1	4053.9	3347.9	2023.5	146.9	19.3
36°	6435.2	6338.7	6099.5	5681.7	5152.9	4451.0	3708.5	3051.5	1825.0	124.8	15.2
37°	5976.8	5850.6	5632.7	5223.9	4671.7	4066.3	3376.9	2768.8	1662.9	131.7	20.7
38°	5442.5	5400.4	5113.6	4733.0	4222.8	3651.3	3020.4	2471.0	1483.7	122.7	33.8
39°	4855.0	4826.8	4540.7	4193.9	3736.1	3210.7	2655.7	2162.1	1304.4	89.6	11.0
40°	4278.7	4198.0	3995.3	3680.2	3281.7	2809.5	2329.6	1898.7	1149.3	88.2	22.1
42.5°	2899.8	2925.3	2706.1	2480.6	2224.8	1904.2	1584.3	1301.7	803.9	65.5	13.8
45°	1862.9	1868.4	1770.5	1595.4	1427.8	1227.9	1016.9	847.3	518.5	36.5	4.1
47.5°	1185.8	1183.1	1120.3	1019.7	910.1	792.9	661.2	553.6	335.8	28.3	12.4
50°	746.7	743.9	704.6	640.5	579.1	501.9	419.2	356.4	212.3	33.8	13.8
51°	606.7	610.8	577.8	512.9	465.4	391.6	334.4	284.0	166.2	23.4	12.4
52°	500.5	497.8	477.1	422.6	383.3	319.9	272.3	232.3	138.6	20.7	5.5
53°	402.6	404.0	383.3	341.3	303.4	255.8	217.9	180.6	99.3	15.2	4.1
54°	318.5	315.8	308.9	268.2	244.8	202.7	170.3	138.6	85.5	2.8	0.0
55°	271.0	266.8	257.2	222.0	198.6	167.5	135.8	118.6	73.8	6.9	0.0
57.5°	156.5	156.5	151.0	131.7	115.8	103.4	82.7	77.2	37.9	6.9	0.0
60°	97.9	85.5	95.1	81.4	64.1	57.2	47.6	43.4	32.4	12.4	2.8
61°	81.4	65.5	64.1	60.0	55.8	37.9	32.4	35.2	20.7	4.1	2.8
62°	58.6	51.7	55.8	47.6	42.1	29.6	26.9	25.5	12.4	5.5	6.9
63°	53.1	47.6	46.2	35.2	31.0	31.0	23.4	22.1	15.2	11.0	5.5



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CANDELA DISTRIBUTION (continued):

	0°	2.5°	5°	7.5°	10°	12.5°	15°	17.5°	22.5°	45°	67.5°
66°	28.3	23.4	20.7	23.4	13.8	17.9	6.9	19.3	4.1	6.9	4.1
67.5°	22.1	13.8	12.4	15.2	9.7	6.9	9.7	12.4	4.1	6.9	9.7
70°	19.3	9.7	13.8	12.4	9.7	12.4	13.8	13.8	4.1	13.8	12.4
72.5°	19.3	12.4	6.9	5.5	5.5	5.5	5.5	5.5	8.3	19.3	15.2
75°	8.3	8.3	4.1	9.7	5.5	8.3	5.5	13.8	5.5	15.2	12.4
77.5°	5.5	6.9	0.0	6.9	0.0	0.0	4.1	9.7	4.1	11.0	13.8
80°	0.0	6.9	4.1	0.0	2.8	4.1	0.0	1.4	2.8	12.4	5.5
82.5°	2.8	4.1	5.5	2.8	2.8	0.0	0.0	0.0	0.0	8.3	6.9
85°	2.8	5.5	0.0	1.4	5.5	2.8	1.4	6.9	2.8	9.7	11.0
87.5°	0.0	2.8	2.8	0.0	4.1	0.0	4.1	2.8	0.0	8.3	4.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P315491

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CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
0°	49.0	49.0	49.0	49.0	49.0
2.5°	42.1	37.9	32.4	40.7	33.8
5°	50.3	46.2	36.5	43.4	39.3
7.5°	51.7	43.4	37.9	35.2	39.3
10°	31.0	20.7	15.2	20.7	11.0
12.5°	51.7	36.5	33.8	37.9	42.1
15°	39.3	23.4	23.4	17.9	25.5
17.5°	22.1	17.9	16.5	22.1	25.5
20°	23.4	15.2	12.4	20.7	19.3
21°	20.7	5.5	16.5	16.5	19.3
22°	29.6	13.8	16.5	26.9	28.3
23°	19.3	15.2	12.4	16.5	22.1
24°	28.3	16.5	15.2	20.7	31.0
25°	19.3	15.2	15.2	19.3	16.5
26°	11.0	15.2	11.0	16.5	13.8
27°	8.3	13.8	8.3	12.4	16.5
28°	17.9	22.1	20.7	22.1	19.3
29°	19.3	23.4	19.3	29.6	22.1
30°	11.0	20.7	9.7	22.1	19.3
31°	11.0	15.2	6.9	22.1	19.3
32°	1.4	8.3	4.1	8.3	8.3
33°	8.3	9.7	11.0	17.9	13.8
34°	13.8	16.5	11.0	19.3	16.5
35°	15.2	8.3	12.4	20.7	22.1
36°	4.1	4.1	6.9	16.5	5.5
37°	8.3	23.4	16.5	28.3	16.5
38°	13.8	28.3	26.9	35.2	28.3
39°	2.8	8.3	9.7	19.3	19.3
40°	12.4	20.7	15.2	28.3	28.3
42.5°	9.7	15.2	11.0	23.4	19.3
45°	4.1	4.1	2.8	15.2	11.0
47.5°	6.9	6.9	12.4	19.3	33.8
50°	13.8	13.8	17.9	32.4	31.0
51°	8.3	6.9	9.7	22.1	28.3
52°	6.9	9.7	9.7	22.1	22.1
53°	2.8	0.0	0.0	16.5	13.8
54°	2.8	1.4	4.1	12.4	19.3
55°	0.0	6.9	5.5	25.5	28.3
57.5°	1.4	11.0	5.5	17.9	22.1
60°	6.9	8.3	15.2	17.9	22.1
61°	0.0	6.9	6.9	16.5	19.3
62°	0.0	5.5	12.4	15.2	19.3
63°	6.9	8.3	11.0	17.9	22.1



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CANDELA DISTRIBUTION (continued):

	90°	112.5°	135°	157.5°	180°
66°	4.1	11.0	13.8	17.9	16.5
67.5°	8.3	9.7	8.3	23.4	28.3
70°	11.0	17.9	19.3	16.5	28.3
72.5°	6.9	9.7	13.8	25.5	28.3
75°	12.4	13.8	20.7	23.4	28.3
77.5°	9.7	13.8	13.8	15.2	28.3
80°	4.1	12.4	13.8	15.2	8.3
82.5°	5.5	8.3	5.5	15.2	11.0
85°	2.8	12.4	11.0	13.8	13.8
87.5°	4.1	6.9	6.9	12.4	8.3
90°	0.0	0.0	0.0	0.0	0.0



Report Generated By E9808895 / USPTCWHP6082093





— 0°-180° - - 45°-225° - - - - 90°-270°







64°	31.0	32.4	31.0	22.1	16.5	15.2	11.0	19.3	5.5	5.5	0.0
65°	28.3	31.0	23.4	26.9	17.9	16.5	9.7	19.3	2.8	9.7	6.9





64°	4.1	6.9	6.9	12.4	19.3
65°	6.9	9.7	9.7	17.9	13.8



(END OF REPORT)